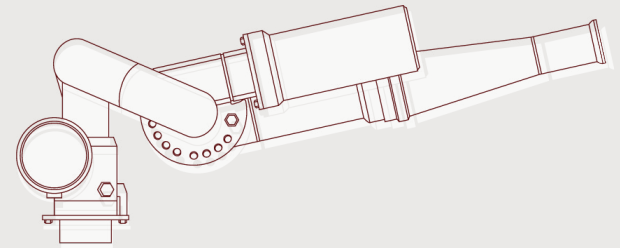


WATER CANNONS

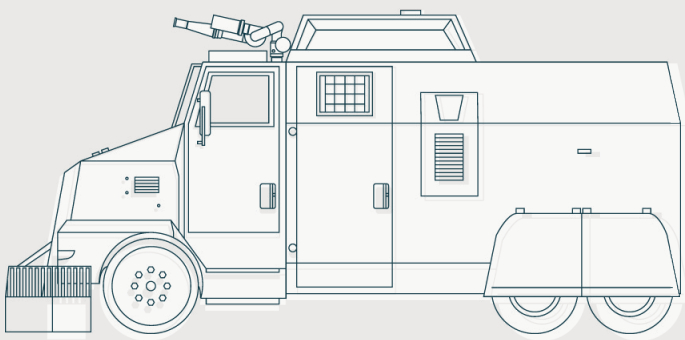
High- or low-velocity streams of water, commonly known as **water cannons**, are frequently used for dispersing crowds or limiting access to certain areas. Water cannons may cause **hypothermia**, direct **trauma** from the pressurized water, **secondary injury** from being knocked down or colliding with objects, or injuries from chemicals and dyes dissolved in the water. These medical problems – along with practical and human rights concerns about communication, intimidation, indiscriminate and disproportionate use, and collective punishment – highlight water cannons’ potential for misuse.

HISTORY

Water cannons were first used for crowd control in the **1930s in Germany** and, by the **1960s**, were frequently used during the Civil Rights protests in the **United States**. Now most often employed as large truck-mounted hoses, water cannons are used worldwide, with little to no regulation.



HOW THEY WORK



Water cannons are water hoses either connected to in-ground water supplies or mobile bladders (often on trucks). They propel streams of **high-pressure water** aimed at pushing back crowds or low-pressure streams intended to douse. Modern water cannons can have flow rates of up to **20 liters of water per second**, and can stream water **67 meters away**. Different agents may be mixed into water cannons to create secondary impacts: **colored dyes**, **malodorous chemicals** and **invisible UV markers** are used as means of collective punishment or for the purpose of later identifying and arresting protesters.

HYPOTHERMIA & FROSTBITE

In colder climates, the use of water cannons may cause hypothermia and frostbite.

INTERNAL INJURIES

Direct injuries may include traumatic or internal injuries from the force of the water stream.

HEALTH EFFECTS

Water cannons can affect the health of individuals in a number of ways:

FALLING & SLIPPING

Indirect injuries from the blunt force of water cannons include forced falls and slipping.

EXPOSURE TO ADDED CHEMICALS

Added chemicals may also have negative health effects.

FINDINGS ON INJURIES FROM A LITERATURE REVIEW AND RESEARCH

After reviewing articles and data published in secondary sources, a number of serious injuries caused by water cannons were identified:



Several individuals sustained facial fractures and eye injuries from direct trauma from water cannons.



Secondary injuries included traumatic brain injuries, bruises, rib fractures and various musculoskeletal injuries, primarily from falls and trauma secondary to the force of the water.



Malodorous chemical agents have been reported to cause prolonged nausea and labored breathing.

VARIABLES THAT CAN EXACERBATE INJURIES



PRESSURE, DISTANCE AND DURATION OF EXPOSURE

Injuries can vary in intensity depending on the pressure, distance and duration of exposure, as well as contextual factors such as ambient temperature and wind conditions, and the ability of targeted people to disperse safely.

POLICY RECOMMENDATIONS

CONTEXTUAL FACTORS MUST ALWAYS BE CONSIDERED BEFORE MAKING A DECISION TO DEPLOY WATER CANNONS, SPECIFICALLY WHEN USED IN COLD WEATHER OR WHERE DISPERSAL MAY NOT BE SAFE.

✓ **Dyes and other chemical agents are not appropriate** for the purpose of safely managing crowds and should be prohibited. The primary outcome of these additives appears to be collective punishment and humiliation, which are not legitimate policing tactics.

✓ **Regulations on appropriate water pressure and temperature and limitations on distance** should be defined both by manufacturers and law enforcement departments.